

REMARKS

Claims 1-90 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-8, 12-20, 24, 31, 35-42, 46-53, 57-64, 69-75, 79-85 and 90 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sunter, (U.S. Pat. No. 6,204,694). This rejection is respectfully traversed.

With respect to claim 1, as best understood by Applicant, Sunter fails to show, teach, or suggest an apparatus for testing an integrated circuit comprising a plurality of clocked storage elements interconnected by a plurality of signal paths, the apparatus comprising an analysis circuit adapted to identify one of the signal paths as flawed based on the change of the duration to the second duration.

For anticipation to be present under 35 U.S.C §102(b), there must be no difference between the claimed invention and the reference disclosure as viewed by one skilled in the field of the invention. Scripps Clinic & Res. Found. V. Genentech, Inc., 18 USPQ.2d 1001 (Fed. Cir. 1991). All of the limitations of the claim must be inherent or expressly disclosed and must be arranged as in the claim. Constant v. Advanced Micro-Devices, Inc., 7 USPQ.2d 1057 (Fed. Cir. 1988). Here, Sunter fails to disclose the limitation of an analysis circuit adapted to identify one of the signal paths as flawed based on the change of the duration to the second duration.

The present invention is directed to testing clocked storage elements that are interconnected by signal paths. For example, “circuit 202 comprises a plurality of clocked storage elements such as flip-flops that are interconnected by a plurality of signal paths...Each clocked storage element comprises a clock input to receive a clock signal.” (Paragraph [0028]). In other words, the signal paths in the limitation “an analysis circuit adapted to identify one of the signal paths as flawed” refer to the signal paths interconnecting clocked storage elements as is indicated in the claim. As shown in an exemplary embodiment in FIG. 2, an analysis circuit 214 indicates one of the signal paths as flawed as described in Paragraph [0049].

In contrast, Sunter appears to be absent of any teaching or suggestion of such a limitation. For example, the Examiner alleges that Sunter teaches an analysis circuit adapted to identify one of the signal paths as flawed at column 6, lines 59-65. The cited portion of Sunter states:

Using a general method from the prior art, the output frequency of the programmable ring oscillator 1200 can be measured by counting oscillation cycles during N periods of a known accurate, reference frequency. If the comparison indicates that the output frequency is too high, the programmed setting of the delay stages 1210a-1210n in the ring oscillator 1200 can be changed to decrease the output frequency. Similarly, if the output frequency is too low, the programmed setting can be changed to increase the output frequency.

Applicant respectfully notes that the cited portion appears to be absent of any teaching or suggestion of identifying flawed signal paths, and more specifically, fails to disclose identifying flawed signal paths between clocked storage elements. Instead, the cited portion appears to be directed to changing a programmed setting of delay stages to increase or decrease output frequency of a ring oscillator. Applicant respectfully

submits that indicating that a frequency is too high or too low is not analogous to identifying a signal path as flawed.

Applicant respectfully submit that claim 1, as well as its dependent claims, should be allowable for at least similar reasons. The remaining independent claims, as well as their corresponding dependent claims, should be allowable for at least similar reasons.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 13, 25, 36, 47, 58, 69, and 80 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Liguori, (U.S. Pat. No. 6,059,836) and further in view of Sunter. Claims 9-11, 21-23, 32-34, 43-45, 54-56, 65-67, 76-78, and 87-89 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sunter in view of Palermo (U.S. Pat. No. 5,761,097). These rejections are respectfully traversed.

With respect to claim 1, as best understood by Applicant, Liguori, either singly or in combination with Sunter, fails to show, teach, or suggest an apparatus for testing an integrated circuit comprising a plurality of clocked storage elements interconnected by a plurality of signal paths, the apparatus comprising an analysis circuit adapted to identify one of the signal paths as flawed based on the change of the duration to the second duration.

It is a longstanding rule that to establish a prima facie case of obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 143 (CCPA 1974), see MPEP §2143.03. Furthermore, when evaluating claims for obviousness under 35 U.S.C. §103, all of the limitations

must be considered and given weight. Ex parte Grasselli, 231 USPQ 393 (Bd. App. 1983), MPEP § 2144.03.

Here, the combination fails to disclose the limitation of an analysis circuit adapted to identify one of the signal paths as flawed based on the change of the duration to the second duration. Applicant respectfully submits that Sunter fails to disclose this limitation as noted above with respect to the rejection under 35 U.S.C. § 102(b) and that Liguori fails to make up for the deficiencies of Sunter. Claim 1, as well as its dependent claims, should be allowable for at least these reasons. The remaining claims, as well as their corresponding dependent claims, should be allowable for at least similar reasons.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: August 17, 2006

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